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Application No.: 09/896,432  
Appeal Brief dated 20 October 2005  
Reply to Office Action of 10 August 2005

Patent  
TH-2094 (US)  
RST:SWT

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Rachael Stiegel  
Date: 27 Feb. 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	)	
	)	
Edward P. Cernocky and	)	
Allen J. Lindfors	)	
	)	
Serial No. 09/896,432	)	Group Art Unit: 3641
	)	
Filed June 29, 2001	)	Examiner: Daniel L. Greene
	)	
METHOD AND APPARATUS FOR DETONATING	)	February 27, 2006
AN EXPLOSIVE CHARGE	)	
	)	
COMMISSIONER FOR PATENTS		
Alexandria, VA 22313-1450		

Sir:

**REPLY BRIEF UNDER 37 CFR §41.41**

The following Reply Brief is on appeal of a final rejection of claims of the above-identified U.S. patent application, the final rejection contained in an Office Action mailed on 10 August 2005, and an Appeal Brief filed by Applicant on 11 October 2005. This is a reply brief to Examiner's Answer mailed 27 December 2005. It is respectfully requested that the Board consider the following arguments and reverse the final rejection of claims 1-14 in the above-identified application.

**(i) Real Party in Interest**

The invention of the present application is assigned to Shell Oil Company, which is the real party of interest in the present appeal.

**(ii) Related Appeals and Interferences**

Appellant, and appellant's legal representative, are not aware of any appeals or interferences that directly affect or could directly be affected by or have a bearing on the Board's decision in the present appeal.

**(iii) Status of Claims**

Claims 1-14 stand as finally rejected under 35 U.S.C. §103.

**(iv) Status of Amendments**

No amendments have been made after the issuance of the Office Action on 10 August 2005.

**(v) Summary of Claimed Subject Matter**

The present invention relates to a detonation device for selectively perforating a tubular with a designated explosive charge located downhole in a well bore as shown in **FIG 1** and **FIG 5** in the application. The device includes: the tubular **10**; the designated explosive charge attached to the tubular **18**; a wireless receiver **38**; microprocessor and control means **40** connected to said wireless receiver **38**; an explosive bridge wire **42**; high voltage supply means **44**; and energy storage and trigger means **46**, whereby a coded signal received by said wireless receiver **38** is decoded by the micro processor **40** and, if the code designates that the respective explosive charge **18** is to be detonated, sends a signal to the trigger means which will supply high voltage to explosive bridge wire **42** which will create sufficient energy to initiate detonation of the respective explosive charge **18** and thereby perforating the tubular **10**. In an embodiment of the invention (see **FIG 1**, **FIG 5**, and **FIG 6**), the explosive bridge wire **42**

includes: a circuit board **48** having an aperture therein; and an electrical circuit **52** formed on the board **48** with a portion of the circuit overlying the aperture forming a bridge **50**, the bridge **50** having dimensions smaller than the rest of the electrical circuit so that, upon application of power to the circuit, the bridge **50** will flash vaporize causing detonation of the nearby explosive charge **18**.

**(vi) Grounds of Rejection to be Reviewed on Appeal**

1. Whether claims 1-5 and 7 are unpatentable over Snider in view of Guerreri.
2. Whether claim 6 is unpatentable over Snider in view of Guerreri and further in view of Neyer.
3. Whether claims 8-12 and 11-14 are unpatentable over Snider in view of Abouav and further in view of Guerreri or in the alternative further in view of US Patent 5,295,544 to Umphries.
4. Whether claim 13 is unpatentable over Snider in view of Abouav, further in view of Guerreri as applied to claim 8 above, and further in view of Neyer or in the alternative further in view of US Patent 5,295,544 to Umphries and further in view of Neyer.

**(vii) Arguments**

**1. Rejection of claims 1-5 and 7 as unpatentable under 35 U.S.C. §103 is improper because there is no suggestion to combine the references and the references do not disclose all of the elements in the claims.**

Examiner has failed to provide a prima facie basis for rejection because there is no suggestion to combine the references cited. Examiner asserts that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Guerreri's apparatus in order to achieve the benefits of a wireless system as well (i.e. no cost for wires, no management of wires, portability, etc.) as the desired effect of producing a blasting system, which is comprised of a plurality of detonator assemblies that are individually detonated

by a wireless remote command source.” Examiner further states that Guerrieri and Snider are analogous art because they both deal with detonation of explosives. Appellant respectfully disagrees.

On page 16 in the Examiner’s Answer, Examiner states that “Appellant has failed to provide any reasoning whatsoever as to why there is no suggestion to combine other than saying it isn’t so.” Appellant respectfully disagrees. Appellant’s arguments presented in the Appeal Brief filed on 11 October 2005 are reproduced below along with additional arguments in support of the assertion that Snider and Abouhav *are not* analogous art.

Analogous art, according to the CCPA and the Federal Circuit, is all art that is either in the field of technology of the claimed invention or deals with the same problem solved by the claimed invention. In *In re Wood*, the court held:

The determination that a reference is from a non-analogous art is therefore twofold. First we decide if the reference is within the field of the inventor’s endeavor. If not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved.

*In re Wood*, 599 F.2d 1032, 202 USPQ 171 (CCPA 1979).

*In re Clay* represents an example of two inventions in the petroleum industry held to be non-analogous art. Here the court held that the claimed invention, which related to a method for *storing refined* petroleum products in a *man-made* storage tank, was not analogous art to a reference directed to a method for extracting *crude oil* from a *porous* hydro-carbon-bearing *natural underground* formation. *In re Clay*, 966 F.2d 656, 23 USPQ2d 1058 (Fed. Cir. 1992). These italicized features, the court said, show a different “field of endeavor” and different “purposes,” which defeat the possibility of dealing with or solving a common problem.

Because from the facts derived from the references, as set forth below, the reference is non-analogous art; therefore, the rejection is unsupported by the art and should be withdrawn.

**1. Snider and Guerri are not in the same field of endeavor.**

- a. Snider relates to "a process or apparatus for establishing communication through the wall of a wellbore tubular. (see column 1, lines 6-8).
- b. Guerreri relates to "detonation of explosive charges using electrical detonators in environments *having high levels of extraneous electricity*. (see column 1, lines 9-13). More specifically, Guerreri relates to the detonation of explosives in hostage-taking situations in urban or highly concentrated areas (see column 1, lines 15-61).
- c. A wellbore tubular does not have high levels of extraneous electricity especially in comparison to the highly populated urban area described by Guerreri.

**2. Guerri is not reasonably pertinent to the particular problem with which the inventor was involved.**

Thus, Snider and Guerreri are neither in the same field of technology nor do they solve the same problem. One skilled in the art of establishing communication through the wall of a wellbore tubular would not look to combine elements of Snider with elements of Guerreri, a technology in the field of detonation in environments having high levels of extraneous electricity.

**2. Rejection of claim 6 as unpatentable under 35 U.S.C. §103 is improper because there is no suggestion to combine the references.**

For the reasons presented in section 1 of this Appeal Brief, Snider and Guerreri are not analogous art; therefore, there is no suggestion to combine Snider, Guerri, and Neyer, and a prima facie showing of obviousness is not established. This rejection is therefore improper.

**3. Rejection of claims 8-12 and 11-14 as unpatentable under 35 U.S.C. §103 is improper because there is no suggestion to combine the references and the references do not disclose all of the elements in the claims.**

For the reasons presented in section 1 of this Appeal Brief, Snider and Guerreri are not analogous art; therefore, there is no suggestion to combine Snider, Guerri, and Abouav, and a prima facie showing of obviousness is not established. This rejection is therefore improper. Even if there were a suggestion to combine the references, Examiner also fails to present a prima facie showing of obviousness because not all of the limitations of claim 8 are disclosed. Agent has amended claim to include the limitation of attaching the explosive charge to the tubular such that the explosive charge is in direct contact with the tubular. This limitation is supported by the specification and is not suggested by the cited references.

**4. Rejection of claim 13 as unpatentable under 35 U.S.C. §103 is improper because there is no suggestion to combine the references.**

For the reasons presented in section 1 of this Appeal Brief, Snider and Guerreri are not analogous art; therefore, there is no suggestion to combine Snider, Guerri, Abouav, and Neyer, and a prima facie showing of obviousness is not established. This rejection is therefore improper.

For the reasons set forth above, the applicants assert that the rejections made by the Examiner are improper. Applicants therefore request that the Board reverse the Examiner's rejections, and allowance of the claims is respectfully requested.

**(viii) Claims Appendix**

Claims under Appeal

US 09/896,432

1. (Previously presented) A detonation device for selectively perforating a tubular with a designated explosive charge located downhole in a well bore, said device comprising:

the tubular;

the designated explosive charge attached to the tubular;

a wireless receiver;

microprocessor and control means connected to said wireless receiver;

an explosive bridge wire;

high voltage supply means; and energy storage and trigger means,

whereby a coded signal received by said wireless receiver is decoded by the micro processor and, if the code designates that the respective explosive charge is to be detonated, sends a signal to the trigger means which will supply high voltage to explosive bridge wire which will create sufficient energy to initiate detonation of the respective explosive charge and thereby perforating the tubular.

2. (Original) The detonation device according to claim 1, wherein said coded signal allows selective detonation of a plurality of explosive charges individually.

3. (Original) The detonation device according to claim 1, wherein said coded signal allows selective detonation of a plurality of explosive charges in sequence.

4. (Original) The detonation device according to claim 1, wherein said coded signal allows selective detonation of a plurality of explosive charges in any desired pattern.

5. (Previously presented) The detonation device according to claim 1 wherein the wireless signal does not transmit the power to initiate detonation of

the explosive charge thereby reducing the risk of accidental detonation of the explosive charge.

6. (Previously presented) The detonation device according to claim 1 wherein said explosive bridge wire comprises:

circuit board having an aperture therein;

an electrical circuit formed on said board with a portion of the circuit overlying said aperture forming a bridge, said bridge having dimensions smaller than the rest of the electrical circuit so that, upon application of power to the circuit, the bridge will flash vaporize causing detonation of the nearby explosive charge.

7. (Original) The detonation device according to claim 1 wherein said microprocessor includes digital signal processing logic.

8. (Previously presented) A method for selectively perforating a tubular with a designated explosive charge located downhole in a well bore, comprising the steps of:

attaching the explosive charge to the tubular such that the explosive charge is in direct contact with the tubular;

providing a detonating device having a wireless receiver, microprocessor and control means connected to said wireless receiver, at least one explosive bridge wire, high voltage supply means, and energy storage and trigger means; and

transmitting a coded signal to said wireless receiver to be decoded by the microprocessor and, if the code designates that the respective explosive charge is to be detonated, sends a signal to the trigger means which supplies high voltage to the explosive bridge wire causing it to substantially instantly vaporize creating sufficient energy to initiate detonation of the respective explosive charge and thereby perforating the tubular.



9. (Original) The method according to claim 8, wherein said coded signal allows selective detonation of a plurality of explosive charges individually.
10. (Original) The method according to claim 8, wherein said coded signal allows selective detonation of a plurality of explosive charges in sequence.
11. (Original) The method according to claim 8, wherein said coded signal allows selective detonation of a plurality of explosive charges in any desired pattern.
12. (Previously presented) The method according to claim 8 wherein the coded signal does not transmit the power to initiate detonation of the explosive charge thereby reducing the risk of accidental detonation of the explosive charge.
13. (Previously presented) The method according to claim 8 wherein said explosive bridge wire comprises:
  - circuit board having an aperture therein;
  - an electrical circuit formed on said circuit board with a portion of the electrical circuit overlying said aperture forming a bridge, said bridge having dimensions smaller than the rest of the electrical circuit so that, upon application of power to the electrical circuit, the bridge will flash vaporize causing detonation of the nearby explosive charge.
14. (Previously presented) The method according to claim 8 wherein said microprocessor includes digital signal processing logic.

**(ix) Evidence Appendix**

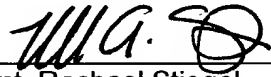
Applicant and appellant's legal representative are not aware of any evidence that directly affects or could have a bearing on the Board's decision in the present appeal.

**(x) Related Proceedings Appendix**

Appellant previously appealed the rejection of claims 1-14. Subsequently, Examiner reopened prosecution. A copy of the Appeal Brief is provided beginning on the following page.

Respectfully submitted,

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